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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/523,158	10/13/2005	Symon D'Oyly Cotton	139543	8260
25944	7590	01/21/2011		
OLIFF & BERRIDGE, PLC P.O. BOX 320850 ALEXANDRIA, VA 22320-4850			EXAMINER FERNANDEZ, KATHERINE L	
			ART UNIT 3768	PAPER NUMBER
			NOTIFICATION DATE 01/21/2011	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

OfficeAction25944@oliff.com  
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<b>Office Action Summary</b>	<b>Application No.</b> 10/523,158	<b>Applicant(s)</b> COTTON ET AL.	
	<b>Examiner</b> KATHERINE L. FERNANDEZ	<b>Art Unit</b> 3768	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 25 October 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 26,28-32 and 45-63 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 45-63 is/are allowed.
- 6) ☒ Claim(s) 26 and 28-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 1/27/05 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claim 26 is objected to because of the following informalities:

In line 2, it is suggested that the word --- a --- be inserted prior to the first occurrence of the word "component".

Claim 26 recites the limitation "the surface" in line 5. There is insufficient antecedent basis for this limitation in the claim.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 26 and 28-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cane et al. (US Patent No. 7,054,674) in view of Cotton (WO 98/22023) as cited by Applicant.

With regards to claim 26, Cane et al. disclose an apparatus for analyzing at least one parameter of a component, comprising a light source (1) for illuminating the component with light of at least a first and second predetermined waveband (column 26, lines 16-19, 39-57); a photoreceptor or photoreceptors (6) for receiving light of at least

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said first and second predetermined wavebands remitted by the component reflected by the surface at a photoreceptor or photoreceptors (column 27, lines 2-4, 21-27); surface reflection elimination means (41,51) for eliminating light reflected by the surface of the component (column 26, line 66-column 27, line 20) and means for analyzing (7) the light received at the photoreceptor (s) to provide a signal derived from the light of the first waveband and the light of the second waveband, and from this calculating the component parameter (column 27, line 34-48). Cane et al. disclose that the derived signal is proportional to a component parameter (column 27, lines 34-38). See Figure 14.

However, they do not specifically disclose that the derived signal is a ratio between the light of the first waveband and the light of the second waveband.

Cotton et al. disclose a method for non-invasively measuring skin structure (see Abstract). They disclose that the slope (i.e. ratio) calculated from the light measurement (Primary 1) performed at one wavelength and the light measurement (Primary 2) made at a different wavelength can be used to ascertain the papillary dermis thickness (pg. 4, entire page; pg. 14, 2<sup>nd</sup> paragraph; see Figure 1, note that the slope is equal to a ratio between the amount of light remitted of the first waveband and the amount of light remitted of the second waveband).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to have the derived signal of Cane et al. be derived from the ratio between the light of the first waveband and the light of the second waveband, as Cane et al. require that the derived signal be proportional to a component parameter and Cotton et al.

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teach that a ratio derived from the light of a first waveband and light of a second waveband is proportional to a component parameter and can be used to determine the component parameter.

With regards to the limitations of claim 27 concerning how the predetermined wavebands are chosen, Cane et al. disclose a light source that is capable of illuminating the component with light of predetermined wavebands chosen such that the component parameter is a one to one function of the ratio between the amount of light remitted by the component of the first predetermined waveband and the amount of light remitted by the component of the second predetermined waveband. Examiner notes that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. As there is no structure tied to the limitations concerning how the predetermined wavebands are chosen, these limitations are considered to be describing an intended use of the apparatus.

With regards to claim 28, Cane et al. disclose that the photoreceptor comprises a digital camera (column 11, lines 49-52; column 13, lines 64-65; column 23, lines 18-21; column 27, lines 25-27).

With regards to claim 29, Cane et al. disclose that the digital camera includes a plurality of filters, one for each predetermined waveband (column 27, lines 21-27).

With regards to claim 30, although the above combined references do not specifically disclose the illuminating light is ambient light or sunlight, they do disclose

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that the wavebands fall within the ambient light or sunlight wavelength range, and therefore, it would have been obvious to one of ordinary skill in the art to have the illuminating light be ambient light or sunlight as these illumination sources are capable of providing the desired wavebands.

With regards to claim 31, Cane et al. disclose that the distance between the photoreceptor (s) and the component is between about 0.5 cm and 10m (see Figure 14).

With regards to claim 32, Cane et al. disclose that the distance between the light source and the component is between 0.5 cm and 10 m (see Figure 14).

#### ***Allowable Subject Matter***

4. Claims 45-63 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: The prior art does not teach or suggest a concentration determination module operable to determine for positions within an image represented by generated image data the concentrations of chromophores and/or thickness of structural layers of said epithelial tissue at said positions in the sample of epithelial tissue represented by said image data utilizing said first and said second ratios determined for said positions by said ratio determination module in combination with the other claimed elements.

***Response to Arguments***

5. Applicant's arguments with respect to claims 26 and 28-32 have been considered but are moot in view of the new ground(s) of rejection.

Examiner notes that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. As discussed in the above rejection, as there is no structure tied to the limitations concerning how the predetermined wavebands are chosen, these limitations are considered to be describing an intended use of the apparatus. Cane et al. disclose a light source capable of illuminating the component with light of predetermined wavebands, wherein the wavebands may be chosen (i.e. by a user) such that they meet the criteria recited in claim 26, and thus the above limitations are met.

Further, even if Applicant were to disagree with Examiner about the limitations describing an intended use, it would have been within the skill of one of ordinary skill in the art, through routine experimentation, to have the predetermined wavebands of Cane in view of Cotton be chosen such that the component parameter is a one to one function of the ratio between the amount of light remitted by the component of the first predetermined waveband and the amount of light remitted by the component of the second predetermined waveband, in order to determine the optimal wavebands that provide a unique solution for determining the component parameter.

***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Asano et al. (US Patent No. 5,974,338; see column 8, line 12-column 10, line 62), Steuer et al. (see Abstract; column 8, lines 49-66; column 11, lines 14-33) and Wieringa (US Patent No. 6,775,565; see column 3, lines 23-51) disclose an apparatus for determining a blood component parameter by illuminating tissue with at least two wavelengths and calculating the component parameter from a ratio of the reflected/received light.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KATHERINE L. FERNANDEZ whose telephone number is (571)272-1957. The examiner can normally be reached on 8:30-5, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on (571)272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/K. L. F./  
Examiner, Art Unit 3768

/Long V Le/  
Supervisory Patent Examiner, Art Unit 3768